Optometrics | OMEGA OPTICAL HOLDINGS

SYSTEMS & ACCESSORIES

- **Light Source**
- **Tunable Light Sources**

For Applications In:

Analytical Chemistry

Physics

Life Sciences

Engineering

Communications

Optometrics Corporation has, for more than forty years, designed and manufactured a broad selection of interference filters for a variety of applications in the industrial, educational and research markets.

Designing and producing interference filters is a complex procedure requiring thin-film expertise and sophisticated instrumentation.

Optometrics Corporation produces its filters in-house on customized vacuum systems, operated by a staff of experienced technicians.

We manufacture interference filters with central wavelengths from 334 nm to 1650 nm in various sizes. This allows you to select the most appropriate and economical filter that meets your optical performance criteria.

FACILITIES

Optometrics' facility in Ayer, Massachusetts contains space for offices, engineering, R&D and production. Equipment that support our broad range of capabilities includes:

- Four metal vacuum coating systems;
- Three thin-film soft coated filter vacuum coating systems;
- Two Ion-Assisted Deposition hard coat vacuum coating systems;
- Three grating ruling engines;
- Production holographic laboratory;
- R&D holographic laboratory;
- Full replication and lamination facilities;
- Full assembly, alignment and test facilities;
- Full complement of test equipment for spectral testing from the UV to the Far Infrared, for mechanical and latness testing, for humidity and environmental testing;
- Extensive marking, packaging and bar coding equipment and capabilities

PRODUCTS

Gratings

Originals and Replicated, Ruled and Holographic; Grazing Incidence, Echelles, Telecom and Transmission Gratings

Beamsplitters

Reflecting/Transmitting Beamsplitters

Optical Components

Mirrors, Lenses, Windows, Flats, Beamsplitters, Prisms

Filters

Soft Coated, Near Ultraviolet, Visible, Near Infrared, and Laser Line Filters

Infrared & Laser Products

Laser Gratings, Holographic Wire Grid Polarizers

Monochromators

Mini-Chrom Monochromators

Systems & Accessories

Light Source

Plus specialized packaging, bar coding and Kanban stocking arrangements for all OEM customers.

GOALS

Optometrics goal is to provide advanced optical components and systems for use in wavelength selection applications in:

- Analytical Chemistry
- Life Sciences
- Telecom Applications
- Physics
- Education
- Space Sciences

and other applications where high quality optics are key.

In order to accomplish this, the Company has assembled state-of-the-art facilities and people to produce:

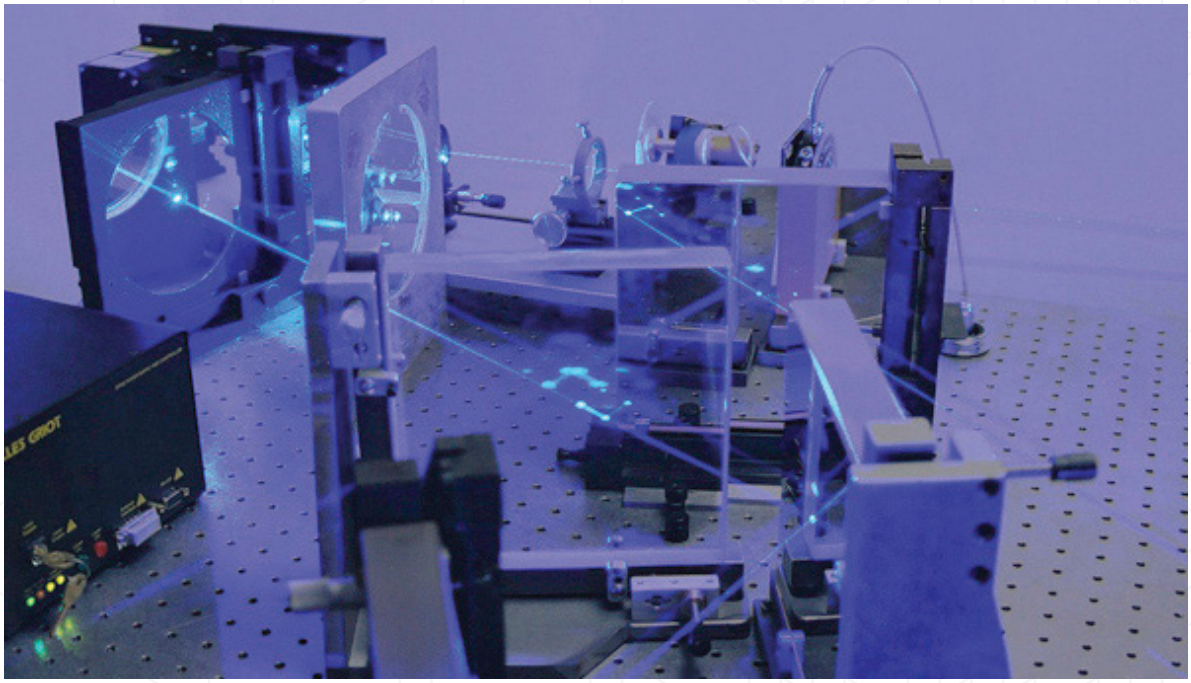
- Diffraction gratings: ruled & holographic, original & replicated, reflection and transmission
- Interference filters
- Optical components
- Laser gratings & products
- Monochromators & accessories
- Spectrophotometers
- Wire grid polarizers: ruled & holographic

OEM SERVICES

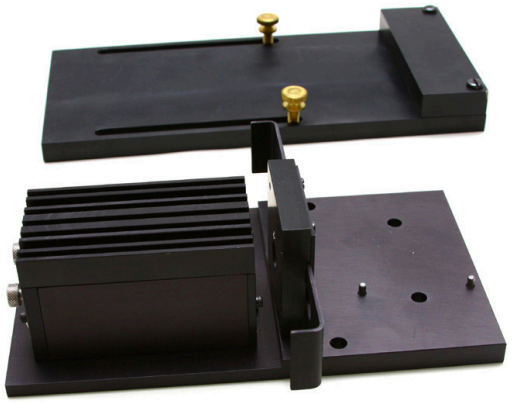
Optometrics caters, in particular, to the needs of its OEM customers by offering special services such as:

- Kanban stocking arrangements
- Custom packaging programs
- Bar coding capabilities
- Code names for complete confidentiality
- Higher level pre-aligned optical assemblies

The Company is also proud of its ability to support customers in all phases of the product development cycle



TUNGSTEN SOURCE MODULE



The Tungsten Source Module includes a 20W tungsten halogen lamp in a quartz envelope, a lamp housing, shutter assembly and variable aperture assembly on a base plate and a regulated 12V DC power supply. Halogen compounds in the lamp recycle tungsten deposited on the inside of the envelope back to the filament. This cycling of tungsten prevents the gradual degradation of the lamp output, particularly in the ultraviolet and increases the life of the lamp. The module can be used as a visible and near infrared source (340 nm to 3 µ) or as a building block to construct a variety of spectrophotometric systems. The module has provisions for attaching a Mini-Chrom monochromator and/or an adapter plate*. The addition of a Mini-Chrom converts the Tungsten Source Module to a compact and versatile monochromatic light source. A quartz lens in the lamp housing focuses radiation from the tungsten lamp onto the entrance slit of the Mini-Chrom, obviating the need for additional optics and time consuming alignment. With an adapter plate, the module can be easily attached to the Optometrics Sample Compartment (see page 5). A Silicon Detector (see page 9) can then be added, resulting in a manual spectrophotometer or fluorometer. Overall dimensions in mm: 203 x 114 x 62; Weight 0.9 Kg (2.0 lbs).

SPECIFICATIONS

Lamp Power Supply:
Line regulation.....0.1%
Load regulation.....1%
Ripple.....1 mV RMS Max.
Input Voltages..... 105-126V AC, 60 Hz
210-252V AC, 50 Hz
Output..... 12V DC/ 2 A
(3 A start-up surge)
Internal overcurrent protection provided.

Lamp:
Type..... Tungsten Halogen in quartz envelope
Power..... 20 W
Color temperature.....3200° K
Nominal life.....500 hours
Spectral output.....340 nm - 3 µ
Connector..... G-4 plug-in

CATALOG NO.	TUNGSTEN SOURCE MODULE	PRICE ($)
TS-110	Tungsten Source Module with Regulated power supply for 105-125V AC.	10 1150.00
TS-220	Tungsten Source Module with Regulated power supply for 210-225V AC	1150.00
TS-20W	20W Tungsten Halogen lamp replacements (package of two).	35.00

LONG PASS FILTERS

Transmission Region.....Cut-off λ to 400 nm or 0.7λc (whichever is the higher)

Maximum Peak Transmission

< 500 nm.....70%

≥ 550 nm.....80%

Cut-On Tolerance (Δλ @ 50% of peak)

≤ 750 nm..... ± 3 nm

> 750 nm..... ± 15 nm

Rejection..... ≥ 0.01% absolute, 0.0001% avg. (≥1.3 times cut-off λ)

Cut-On Slope.....3%, OD=0.3 to OD=4.0

LONG PASS CUT-ON FILTERS

Transmission Region.....Cut-onl to 2200 nm minimum

Maximum Peak Transmission

500-700 nm.....80%

750-1000 nm.....75%

>1000 nm.....70%

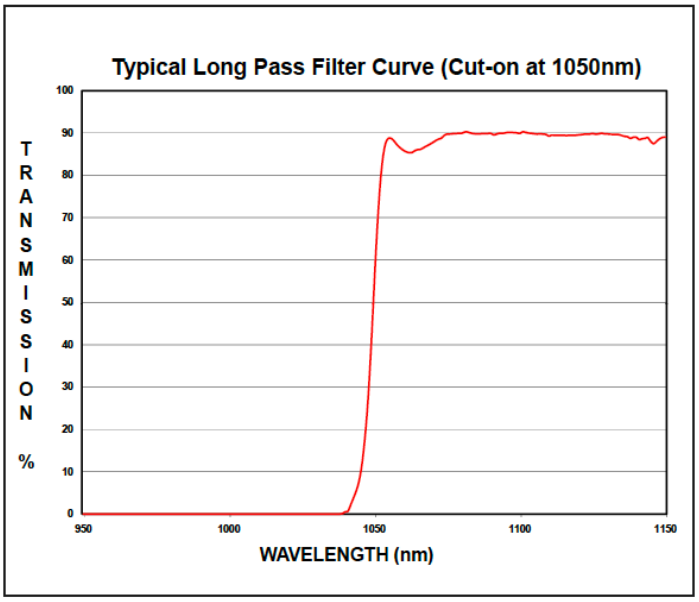
Cut-On Tolerance (@ 50% of peak)

≤ 750 nm..... ± 3 nm

> 750 nm..... ± 15 nm

Rejection..... ≥ 0.01% absolute 200 nm to cut-on

Cut-On Slope.....3%, OD=0.3 to OD=4.0



50% Cut-on Wavelength (nm)	25.4 mm Dia. (Mounted)
500	2-0850
550	2-0851
600	2-0852
650	2-0853
700	2-0854
750	2-0855
800	2-0856
850	2-0857
900	2-0858
950	2-0859
1000	2-0860
1050	2-0861
1100	2-0862
1150	2-0863
1200	2-0864
1250	2-0865
1300	2-0866
1350	2-0867
1400	2-0868
1450	2-0869
1500	2-0870

Optometrics' long pass cut-on filters are all epoxied in a black metal ring for easy handling and mounting in our sample chamber and are **25.4 mm dia. x 9.65 mm thick**. The cut-on wavelength is marked on all filters

TUNABLE LIGHT SOURCES

Tunable light sources are used to maximize throughput in the visible region of the spectrum. They are used to study wavelength dependent chemical, biological, and physical changes or properties. The sources can also be used in color analysis and reflectivity measurements of products for aesthetic purposes.

The filament of a 20W tungsten halogen lamp is imaged so that it exactly fills the entrance slit of a Mini-Chrom monochromator. Surprisingly, as higher power lamps have larger filaments, most of the extra energy never makes it through the entrance slit and lamps with significantly higher wattage will not produce significantly higher throughput.

By turning the knob, the grating is rotated to allow only a few nm of light to pass through the fiber optic adapter or cable.

The lamp used in the TLS series has usable spectral energy between 360 nm and 2000 nm. However, no one grating can give adequate performance over this range.

Single model available optimized for 360-800.

For most illumination applications, band passes of 5 nm or narrower are considered to be high resolution. Band passes of 10 nm or less are rarely needed in colorimetry or photochemistry.

The TLS-6 with a 6 nm band pass, the TLS-10 with a 10 nm band pass when used with the standard 600 micron entrance slit. Power increases with band pass. Typically users will trade band pass for throughput, i.e. use the widest band pass possible that will not affect the quality of the measurement.

MODELS AND VERSIONS

The three models of the Tunable Light Sources, TLS-6, TLS-10, and TLS-25 are available in manual and computer controlled versions.

MANUAL VERSIONS INCLUDE:

- Digital monochromator with 600µ slit set
- Lamp module including variable aperture/shutter and power supply
- Aperture adapter SMA-905
- User manual

SPECIFICATIONS

Monochromators

f/# 3.9
Focal length .....74 mm
Grating size .....20 mm x 20 mm
Entrance slit .....600 microns x 4 mm
Exit slit .....600 microns x 4 mm
SMA-905 connector included

Wavelength Accuracy

TLS-6 .....+/- 0.2%

Counter readability

TLS-6 .....0.2 nm
Stray light rejection 10-3

Gratings

TLS-06 .....1200 g/mm 400 nm blaze

Lamp

Type .....Tungsten Halogen
Power 12V 20W
Color Temperature 32000K
Spectral range .....360 nm to 2000 nm
Power supply 12VDC 2A

Dimensions

Light source (on base plate)

L H W .....20.5 cm X 6.0 cm X 20.5 cm
Weight .....1.4 Kg

QUANTITY DISCOUNTS:

The purchase of multiple pieces of the identical item will be discounted from the prevailing list price as shown below. If more than 100 pieces of a specific item are required, contact our Sales Department for additional discounts.

QUANTITY	DISCOUNT (%)
3 TO 9	5
10 TO 49	10
50 TO 100	15

CUSTOM ORDERS:

All custom orders must be prepaid before entered into production. Cancellation charges will be assessed on any order cancelled after production has been started. Please see Prepaid payment methods.

TERMS:

Prices are FOB Ayer, MA. Standard payment terms are net 30 days for open account customers.

METHODS OF PAYMENT:

OPEN ACCOUNT:

To apply for an open account, please provide a U.S. bank and three U.S. trade references.

CREDIT CARDS:

Optometrics accepts Visa, MasterCard or American Express credit cards on orders not exceeding $2,000 in value. Orders exceeding $2,000 in value may be prepaid by wire transfer or bank check.

COD:

Orders to U.S. addresses may be shipped on a COD basis via UPS or Federal Express.

PREPAID:

Orders may be prepaid by money order, wire transfer, or company check (if encoded with an address and drawn on a U.S. bank). A $35 additional fee is added for wire transfers.

REQUEST A QUOTE

BY SCANNING THE QR CODE OR GO TO

https://www.optometrics.com/contact/request-a-quote/

SHIPMENTS:

Are made via UPS ground service throughout the U.S. International orders are shipped via Federal Express. Freight and insurance charges will be prepaid and added to your invoice. Air shipments or shipments via alternative carriers are made only when requested and authorized by the purchaser.

RETURNS:

To return a product within the warranty period, contact Optometrics to obtain a Returned Goods Authorization (RGA) number. Transportation costs for returned goods must be prepaid. Repaired or replaced products will be returned to you at Optometrics' expense. For out-of-warranty repairs, contact Optometrics to obtain a Customer Return Authorization (CRA) number. No repairs will take place until you have been notified of the cost and have issued a purchase order to cover these costs. All transportation costs are borne by the user. A 15% restocking fee will be charged for all unused returned goods. No product can be returned for restocking after 90 days.

WARRANTY:

Optometrics warranties all products against defects in materials and workmanship for one year from the date of purchase with the exception of light sources which are warranted for three (3) months. Optical components are warranted for one year against performance defects only. Cosmetic defects that do not affect performance are not covered under this warranty.

Optometrics is not liable for any consequential or incidental damage arising from the sale of its product(s). In any event, liability shall not exceed the invoice value of the product(s) sold. Accidental damage, neglect, unreasonable use, attempted service, calibration, adjustments or cleaning not explicitly called for in an instruction manual voids the Optometrics warranty.

Optometrics makes no warranty other than described above for its products or for their performance in a specific application.

CONTACT DETAILS:

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Special sizes or other substrates available.
Quantity discounts available and OEM inquiries welcome.

For more information, contact Optometrics Corporation at sales@optometrics.com.

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